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TOWN PLANNING AND CONSERVATION OF LIFE

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TOWN PLANNING and Conservation of Life

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PLANNING OF CITIES IN ONTARIO

The present Planning and Development Act of Ontario deals largely with the location, the re-location, the extension and the widening of highways and parkways. A more correct title would be "Highway Planning and Development" Act. It does not deal with town planning on the broad lines of other Town Planning Acts, which have to do with the regulation of the use of land and the character of building development in cities, towns, and rural areas.

Most of the modern town-planning legislation in Canada is based on the English precedent. It has to be framed on different lines to suit Canadian conditions, but the main object is identical. The general object of the English Act is given as that of securing "proper sanitary conditions, amenity and convenience in connection with the laying out and use of land." Thus, the securing of proper sanitary conditions, which includes the consideration in advance of the facilities needed to supply land and buildings with economical means of drainage, sewerage, water supply, etc., is the first object. For instance, building on swampy land which could not be economically drained would be prevented. Again, many areas cannot be drained because a comprehensive scheme of drainage was not prepared in advance.

Under the head of amenity, which may be interpreted as agreeableness of surroundings, there would be comprised:

(*a*) Prescribing the space about buildings by fixing building lines or limiting the amount of a lot that can be built upon;

(*b*) Prescribing the height or character of buildings considered reasonable for the purpose of amenity.

Under the head of convenience the main consideration is that of highways and streets, and particularly the provision of wider main thoroughfares adaptable for the principal streams of traffic. It is impossible, however, to deal with this question of convenience in relation to traffic without considering, at the same time, the use to which the land, which is served by the streets or highways, is to be put. Proper consideration of a street or highway system involves the study of the height, density, set-back, and use of the buildings which it serves. In the case of a main thoroughfare, this consideration of building questions cannot be limited to the buildings immediately fronting on the highway; there must also be taken into consideration the heights, densities and uses of the buildings erected, or likely to be erected, on the streets which form tributaries of the main thoroughfares.

Briefly stated, a street or highway system cannot be planned as if it were a separate thing from the building development of the city.

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C.p — Canada. Ontario
C.p — legislation

Secondly, a proper plan for the convenience of traffic cannot be prepared unless the zoning of the city into factory, residential, and other districts has previously been taken into consideration. Traffic has a definite relation to the purposes for which a district is used. The streets should be planned with relation to these purposes as well as to the permissible heights and densities. While, therefore, the street and highway system is important, it is not the first consideration in a town plan, any more than the corridors in an hotel. The corridors have to be planned to suit the rooms, and not *vice versa*.

Compensation to Owners: When Justified

In our Canadian Town Planning and Development Acts we are endeavouring to broaden the scope of the English Acts by making it one of our objects to promote the economic use of land for industry, whether for manufacture or agriculture. We cannot strain the word amenity too far, that is, we cannot interfere to any great extent with vested interests in property merely to obtain an agreeable or picturesque effect. If, however, the industries of a city or district depend for their success on certain restrictions on private interests in property we should not consider it unreasonable to make these restrictions. The only things, however, that are beyond question, in connection with the restriction of private interest in property for the public welfare, are the things that relate to health. If legislation is necessary for the purpose of obtaining certain minimum standards of health we should be able to carry it into effect, even it if involves preventing some one from making a profit out of bad conditions.

Thus, what are called proper sanitary conditions, in the broadest sense, are not only of first importance in the building of a city but they should be obtainable without loss to the community over and above the cost of construction of public works. The matter may be illustrated thus:

If a street is 60 feet wide and should be made 80 feet wide to accommodate the traffic, the cost of expropriating the extra 20 feet and compensating the owners of the property should be borne by the community at large.

If a portion of the city is without parks and the city wishes to provide an open space, it should either purchase the land required or secure it by some "give-and-take" arrangement with the owners of the land.

In these two respects we are asking something for the benefit of the community, which the owner is not bound to give, as an absolutely necessary provision for health, it being assumed that the city has approved of the plan of subdivision which the owner has followed.

In these two categories we, therefore, recognise the rights of property to full compensation. Only in two respects within these classes might this be questioned, namely: first, where it is proved that the owner receives direct benefit from the widening of the street, in which case betterment might be charged against him or, second, where an owner may be required to leave a certain amount of land per acre as a playground for children in the same way as he is required to leave a certain width of land for a street. In the main, however, we may recognise the rights of the owner to compensation in respect of the widening of streets and the conversion of land into open spaces.

When we come to deal with sanitary natters, however, we enter upon a different category. For instance, why should a city have to pay compensation to the owner of swampy lands, if, by a restriction in a town planning scheme it prevents him from building on them? If an area cannot be drained without pumping, why should a city not be in a position to refuse approval of a subdivision plan until the owner agrees

to pay the extra cost of developing his land under healthy conditions? Why should the owner of insanitary houses receive any value from the city for such houses under a demolition order? Why should an owner not be made to provide sufficient air space around his own buildings to secure light and air without dependence on the street or on the property of other owners?

In all these matters it must be assumed that certain minimum standards have been reached regarding proper sanitary conditions. Having determined these minumum standards we say they should be enforced by law and that no compensation should be payable even if such enforcement involves a loss of capital or revenue to the owner of the land. This distinction between things that interfere with the health and welfare of the community, and the things that are merely necessary for convenience and beauty, is recognised in all laws relating to compensation under British common law and the constitution of the United States. It is recognised in all town planning laws and, because it permits so much to be done by way of regulating the use of the land without payment by the community for compensation to private interests, it becomes of additional importance that town planning schemes should have for one of their main objects the securing of proper sanitary conditions, amenity and adequate air space.

Shortcomings of the Ontario Act

When we turn to the Ontario Act we find that not only is the Act limited to streets and highways, not only is there no provision made for considering the heights, densities and uses of buildings in relation to the highway plan, but the vital question of arranging the industries and residences of the city and securing proper sanitary conditions and air space surrounding the buildings is ignored.

The provisions of the Ontario Act may be briefly described as follows:

To enable cities to have some control over the land outside their boundaries, the Act sets up a new area called the "Urban Zone". The area of this zone comprises the land within five miles of a city boundary on all sides or within three miles of a town or village boundary. The Act recognizes the subordination of a town or village to a city, or of a village to a town. If any portion of a town or village is within five miles of a city, or any portion of a village is within three miles of a town it shall be deemed to be within the city or town zone, as the case may be.

The objection to this feature of the Act is the power it gives to one municipality to exercise jurisdiction within the area of another municipality, without having first provided the means to permit the planning of the zone to be carried out by the municipality in direct control of the area or by co-operation between the adjacent municipalities. In other town planning legislation a city may include part of the land outside its boundaries in its area, for the purpose of a scheme, but only when it is proved to be necessary to do so after a public hearing, and practically in no case where the outside authority is willing to co-operate and to do its own planning.

The supreme authority in town planning in Ontario is the Railway and Municipal Board. Under the present municipal machinery of the Province, this is as it should be, except that it does not appear that the Board has any expert engineer or town planner to advise it with regard to the details of schemes. In Saskatchewan, the Department of Municipal Affairs, which is the responsible authority, has a competent land surveyor as Director of Town Planning. Similarily all public hearings in England are held by trained experts.

The Act, under section 5, gives a city, town or village power to prepare a general plan but limits such plan to the restricted purposes of highways, parkways, boulevards, parks, playgrounds, and other public improvements. The plan is not required to show or to deal with the relationship of the highways to the character, density, height and use of buildings on the abutting lots. Nor is there any provision in the scheme for preparing a preliminary and tentative plan and submitting same to the Board, so that their approval can be obtained in advance of incurring the expense of getting a certified plan.

The Act permits a city, town, or village to control its method of subdividing the land within the zone in regard to the lots as well as the streets, but without respect to the character of the building development that is to take place.

Under section 6 no plan of survey or sub-division can be registered until it is approved by the local authority, but this power can be obtained without the aid of a Town Planning Act, except that the Act extends the jurisdiction of the city and town to a zone area of land outside of its own boundaries.

The matters to be considered in planning are set out in section 8. Regard has to be paid to the following:

(*a*) The number and widths of highways.

(*b*) The size and form of lots.

(*c*) Making the subdivision conform either to general plan, or to the plan of the adjacent land.

It is difficult to see what really important object is attained by such a plan that could not be obtained by means of by-laws, or at least that does not merely consist in getting streets properly connected. The fact that the scheme does not touch buildings and sanitary conditions means that the planning of the size and form of lots is of little utility. They may be planned for the wrong purpose, even if it is the purpose most agreeable at the moment of planning to the city and the owner. Not until the city or town is planned in regard to its building development and until the location and densities of its factory and residential areas are thought out, can any highway or lot planning be settled in a satisfactory manner.

Section 9 permits the control of the planning of streets on adjacent subdivisions, so that they will be treated as one and fit in with each other. This is useful if it were part of a comprehensive scheme of town planning.

The Act also permits of the setting up of a "Town Planning Commission." It is not, however, a Town Planning Commission, but a Street Planning Commission. This Commission must be a body corporate and exercise all the powers under the Act. Thus, we may create an undemocratic body to over-ride in certain respects not only the municipality that creates it, but the municipalities within the urban zone, which have had no part in creating it. Hamilton has hesitated to appoint such a Commission because it would give power of administration to a non-elected body with no direct responsibility to the tax payers. If Hamilton objects to creating a Commission of its own selection to deal with the planning of its highways, how much more would the municipalities within five miles, but outside of Hamilton, object to a non-elected body having control of the planning of their subdivisions and highways. There may be room for considerable improvement in our democratic way of doing things, but we shall not make progress by setting up non-elected commissions to control matters within the areas of municipalities that have no choice in the selection of the members of the commissions.

Whether or not the draft of the Town Planning Act of the Commission of Conservation be acceptable, Ontario emphatically needs an

Act that will be really a planning and development act and that will show greater recognition of the value of self-government.

The Problem of Suburban Zones

It must, of course, be distinctly recognized that the zones which lie just outside the cities must be dealt with on some different principle from that hitherto followed. It is essential that municipalities, whether cities, towns, or townships, be made to co-operate in controlling the development of suburban areas. It may be necessary to give the cities power to plan such areas, but they should only be permitted to exercise that power after it has been demonstrated that the municipalities outside the boundaries are unwilling properly to exercise it themselves.

Moreover, there is really only one vitally important matter that is wrong with these suburban areas, and that is in respect of building construction and sanitary conditions. As regards inconvenient sub-divisions or absence of proper street connections or parks, the question is important but it is secondary. In the planning, as well as in the construction of highways, we sometimes notice superior judgment and better construction on the county side of our city boundaries. The defects in the county area are most of them in the direction of applying rural laws, and a rural attitude of mind, to an urban problem of building development. It is in connection with this building development and all that pertains to it, including the subdivision of the land, that co-operative action between the city and rural municipality is needed.

The progress being made under the present Act is indicated by the following extract from the Toronto Globe of January 10:

> Application is to be made by the city in the near future for approval by the Ontario Railway and Municipal Board of subdivision plans covering 24,000 acres outside the city limits. The city will also ask for a readjustment of the town-planning zone over which it has control, and which at present includes all lands within five miles of the city limits.

The control of the city over the town planning zone outside its boundaries being limited to the control of streets for subdivision, is, for the reasons already given, not adequate to deal with the real problem of town planning. It is questionable whether all the effort used to control these large suburban areas is worth while having regard to the limitations of the Act.

What is Needed in Ontario

In Ontario, we must have a measure that has for its general object, the promotion of economic uses of the land, its division into manufacturing and residential sections, and the proper control of sanitation, building development, and traffic facilities in connection with it. We need not only that the scope of the Ontario Act be widened to cover real town planning, but also that municipalities be given the power to obtain certain standards of sanitary conditions and air space without having to pay compensation to those who claim to possess vested rights in conditions that are insanitary, or in such densities of building as do not make sufficient provision for circulation of air.

When we have determined all the things that a city may reasonably do to prevent bad conditions and have secured them by a good town-planning scheme, we may have money to spare for luxuries in the way of wider streets and more parks. In view, however, of the heavy financial commitments of our cities, it is in the direction of preventing evils by controlling the actions of those who abuse property, rather than by spending large sums for ornamental features or on expensive reconstruction, that most progress can be immediately secured. Many

necessary reforms can be secured by a scheme without any expense other than the cost of preparing it. Other desirable features may have to wait for want of money, but will be easier and cheaper to obtain, because our scheme will show us what is needed in the way of reconstruction and the best way to get it.

The existing Ontario Planning and Development Act does not meet the needs of cities such as Hamilton, London, and Windsor, which have been giving consideration to the desirability of preparing comprehensive town plans. These cities require a great deal more than the power to control the subdivision of land in the zones lying within five miles of their boundaries. Their estimate of the value of this power to them is shown by the fact that they have taken no steps to give it effect. What these cities require may be summarized as follows:—

1. *A regional study or survey of the industrial, residential, and transportation problems within their boundaries and within the urban zone five miles beyond their boundaries.*

There is no reason why this study should not be proceeded with at once without waiting for further legislation. Hamilton has already carried out the greater portion of a preliminary survey, and London has had a report on its railway situation. The information obtained in these reconnaissance surveys will be invaluable when the time comes to prepare the city planning schemes. Their only real utility is as a preliminary to such schemes.

2. *Additional powers as hereinafter set forth to deal in town planning schemes with all matters connected with the future growth of the city, with the general object of securing the best economic use, proper sanitary conditions, amenity, and convenience in connection with the development of the land.*

The late Premier, Sir William Hearst, raised the objection that much of what is required is already covered by the Municipal Act. One can appreciate the propriety of avoiding duplication of laws giving the same powers, but one must not lose sight of the fact that a town planning scheme has to be framed on elastic lines and with reference to large areas, and that the powers given in the Municipal Act, in reference to local improvements and bylaws, are too definite and inelastic and too scattered among general municipal provisions to be of value in preparing town planning schemes. In any event, if there is fear of duplication, this can be avoided by substituting references to the particular sections of the Municipal Act that give certain powers, for actual provisions. For instance, if it be the case that there is ample power in the Municipal Act to deal with the fixing of residential areas, we could simply refer to that in the Town Planning Act and not include a special provision to cover it. The definite requirements may be stated as follows:

Proposals for Revised Legislation

1. The present Planning and Development Act should be modified so as to permit the municipalities in the urban zones, which lie outside of the cities and towns, to prepare their own schemes if they wish to do so, while retaining for the city or town the power to include the outside area in their scheme in the event of lack of co-operation of the outside authority to prepare its own scheme or a joint scheme.

2. A special official with town planning qualifications should be appointed under the Act to assist the Railway and Municipal Board to administer the Act and to advise local authorities.

3. Each municipal council should be required to make a survey of its area and conditions, and provide for assistance being given by the Provincial Government in the preparation of topographical maps of all districts which are in course of development.

4. Provision should be made for securing co-operation between municipal councils and owners of land so as to give permanent effect to restrictions on the use of land relating to such matters as building lines and the use and character of buildings.

5. The following powers should be granted under the Act to municipalities:

(*a*) The suspension of any powers in the Municipal Act, subject to approval of the Railway and Municipal Board, so far as the suspension is necessary for the proper execution of any scheme.

(*b*) Power to remove or demolish buildings which may be erected in contravention of the provisions of a scheme, after the scheme has been approved, as well as after proper notice is given and while the scheme is being prepared.

(*c*) Provision, not only for paying compensation for injury to owners of property, but also for obtaining for the city half of the increased value given to any property by reason of benefits accruing to such property by the scheme.

(*d*) Power to prescribe certain areas to be used for dwelling houses, apartment houses, factories, warehouses, shops or stores, etc., and to fix the height and character of the buildings in these areas.

(*e*) Exemption for any city or town from claims for compensation in respect of any requirement of the scheme which restricts the use of land for the definite purpose of health of the inhabitants or the amenity of the district, *e.g.*, in regard to fixing factory, business or residential areas, the space about buildings, the percentage of lots that can be covered with buildings, or in regard to the height, character and use of buildings so far as such exemption may be regarded as reasonable by the Railway and Municipal Board.

(*f*) Power compulsorily to acquire land in the same way as under the Housing Act of the province, without cumbersome process of arbitration; and to acquire land in excess of the amount needed to widen a street or construct a new street through a developed area and to re-sell such land after the improvement is made.

(*g*) Power to fix building lines and reserve land on unbuilt-upon areas for new main thoroughfares.

(*h*) Power to classify any land to be used for different kinds of agriculture, horticulture, open spaces, etc., and to recommend a special system of assessment in relation to such classification of uses.

(*i*) Power to prevent noxious trades, bill-boards, etc., where injurious to the surroundings.

(*j*) Power to rectify or alter any existing subdivisions, including the pooling of lands of several owners, and the roads and streets abutting or adjacent thereto; and to initiate the planning of the subdivision of land in advance of its being placed on sale for building purposes, for the purpose of bringing owners of adjacent lands into line with any comprehensive scheme.

(*k*) Power to prevent building on low-lying and insanitary lands pending reclamation and until provided with sanitary arrangements at the expense of the owners.

(*l*) Power to obtain proper representation of the Municipal Councils on town planning commissions and limitation of the spending power of commissions to the cost of preparing schemes. Expenditure on execution of schemes to be subject to approval of Municipal Councils.

(*m*) Power to classify roads or streets (after zoning into factory, business and residential districts) as follows:

(1) Main arterial roads.

(2) Secondary roads, being roads for general or local traffic.

(3) Industrial roads for access to industrial districts.

(4) Residential roads, being roads used primarily for access to residences.

(5) Parkways or boulevards, being roads which serve the purpose of either a main or secondary road, a portion of which is dedicated to ornamental purposes, etc.

The Provincial Government should be asked to incorporate provisions in the present Act or to frame a new Act to cover these requirements. It should be so framed as to permit local authorities to prepare comprehensive schemes of town planning.—*Thomas Adams*

NOTE.—A resolution was passed at the Hamilton conference representative of the cities and towns of southwestern Ontario, held on November 27 and 28, asking the Government to amend the Act in accordance with the above summary. It is hoped that the matter will receive the favourable consideration of the new Government.

HOUSING REFORMS NEEDED IN CANADA

Resolutions passed by the Convention of the Sanitary Inspectors' Association of Western Canada, held at Saskatoon, Saskatchewan, August 1st and 2nd, 1919.

WHEREAS there is a prevailing shortage of houses for industrial workers in nearly all the towns and cities in Canada, due largely to the cessation of the building of houses by private enterprise during the period of the war, and

WHEREAS the building of houses by private enterprise has seldom resulted in the provision of an adequate supply of small houses and cottages and, moreover, the element of speculation inseparable from building under private enterprise has resulted in the erection of large numbers of houses of inferior construction not adapted to the needs of the climate of Canada, especially in winter, and

WHEREAS the cost of building materials and labour are now so high as totally to discourage the building of houses by private investors,

THEREFORE: The Sanitary Inspectors' Association of Western Canada, composed of Sanitary Inspectors who are in daily touch with the evils caused by lack of proper housing, makes the following suggestions regarding housing:—

1. *Necessity for Municipal Housing Schemes.*

That in all urban municipalities where there is a known shortage of suitable houses for industrial workers, Municipal Housing Schemes should be inaugurated, taking advantage of the Dominion Government money offered for that purpose at 5 per cent interest, and which may be obtained through the various Provincial Governments. Following the example set by Great Britain, houses should be provided even though the present high cost entail a loss by the Government or municipalities. One advantage of building under the Dominion Government plan is that municipalities may obtain the advice and assistance of the housing experts of the Government.

2. *For Sale or Rent?*

We do not dogmatize as to what shall be done with the houses after erection. Whether they be sold outright to individual purchasers, rented or sold to co-operative groups or working men, is immaterial, except that we may point out that by building for rent the poorest families who are most in need of better housing and who are least able to provide a deposit for the purchase of houses, will be accommodated.

3. *Size of Lots.*

In cities and towns such houses should be built on lots not less than 33 feet wide, in order to obtain adequate light and ventilation.

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No more 25-feet lot subdivisions should be approved. Legislation prohibiting this practice and also limiting the number of dwellings which may be erected per acre, should be enacted by each province.

4. *Warmer Construction Necessary.*

Any dwellings built under Municipal Housing Schemes should be constructed in a more substantial manner than has hitherto obtained in this country. There is no reason why houses should not be insulated with Flaxlinum or other approved non-conductor of heat. This would make such houses cooler in summer and, during the winter, would result in the saving of great quantities of coal annually, besides sparing the occupants a great deal of misery and discomfort at present experienced in poorly constructed houses.

5. *Adequate Building By-laws and Inspection a Necessity.*

Constant supervision is required during construction. Where there are no proper building laws, or where such laws are defective, these should be enacted or revised and made effective by adequate inspection.

6. *A Housing Law, as Distinct from a Building Code, Necessary.*

Every province and every municipality should have a *housing law* as distinct from a mere *building code.* In places where there is no effective building or health inspection, the Provincial Government should take control and supervision of housing schemes.

7. *Plans of all Dwelling to be approved by Health Department.*

The plans for every building intended to be used for human habitation should be examined and approved by the Health Department before permit for construction is issued. This approval should apply to open spaces around the house, the lighting, ventilation, plumbing, and drainage, and all other features affecting the health of the future occupants. A final inspection and permit of the health officer should also be required before occupation is permitted.

8. *Speculation in Lots should be restricted.*

Each Provincial Government should devise and enact legislation which will prevent, as far as possible, speculation in building lots, the unrestricted abuse of which is very largely responsible for our housing evils.

9. *Provincial Governments should approve Sites of New Towns.*

The consent of the Provincial Government should be required in the selection of any proposed new townsite in order that the practicability of obtaining proper drainage and other sanitary features may be ensured.

10. *Types of Houses recommended.*

The types of houses recommended are 4- and 5-roomed cottages. These should largely predominate, although a number of 6-and 7-roomed houses might also be supplied. The limited number of small houses and cottages now available has resulted in the occupation of larger houses by several families for which they are not at all adapted. This unlawful conversion of one-family dwellings to the uses of tenement houses is producing over-crowding and other insanitary conditions. The occupation of such houses as tenements is not conducive to health or morality, and is the beginning of slum conditions.

11. *Reduction of Cost by erecting a number of Houses at one time.*

It should be quite possible to reduce the cost of construction of houses built under any municipal housing scheme. Many of the component parts of houses can be standarized and the purchase of the materials in large quantities should result in a considerable saving. This applies especially to materials for drainage and plumbing, heating apparatus, and lighting. If all the houses in a municipality are erected in one locality, there should be a further saving on haulage and on cost of supervision.

12. *Reduction of Taxes on Single Family Dwellings.*

Further encouragement might be given by municipalities reducing or remitting the taxes on buildings used as dwellings by single families.

GARDEN SUBURB AT SHERBROOKE, QUE.

At Sherbrooke, Que., there is to be a new garden suburb, due to the initiative of the Canadian-Connecticut Cotton Mills Co. and the sympathetic and intelligent co-operation of the citizens. A housing company has been formed, for which a charter has been received from the Quebec government. A contract has been made with the cotton company whereby the company takes all responsibility and guarantees to pay the housing company 10 per cent per annum on the investment and to collect the rents from the tenants. One hundred houses will be built during the present year and another hundred during 1921 and after that more houses to keep pace with the extension of the plant, which is expected to double its capacity within the next few years. At a recent meeting of the City Council, Ald. Wells stated the case as follows:

> The company merely want houses for their employees, whom they wish to help in every way. It will be a losing proposition for them, but they are willing to do it to get the houses. As for us, we are merely lending the provincial money to the Housing Company, who will also operate at a loss, and we are getting a great new industry for the city.

The City Council approved of the contract with the cotton company. A site of 52 acres adjoining the Company's mills has been bought at $1,000 an acre, and is to be laid out on town planning lines. The project is receiving every encouragement from the housing department of the Government of Quebec.

Day Nurseries

There is one feature of the cotton company's scheme that would have been considered wildly idealistic a few years ago, but which modern experience has shown to be very profitable, as it has reduced the labour turnover from 400 per cent to practically nil. The company desire to establish, as part of the housing scheme, day nurseries for the conservation of child life, because they have tried the experiment at their mills at Danielson, Connecticut, and found it a crowning success, both from a business and a humanitarian standpoint. The following letter from Mr. R. J. Caldwell, chairman of the Company, to Dr. Nadeau, Director of Housing, speaks for itself:

> I see that, while your plans do not provide for day nurseries in the provincial housing plan from which Sherbrooke is to benefit, yet something may be arranged in this programme at Sherbrooke, and I am happy to see your interest in it; but I can assure you from our own practical experience that nurseries are very profitable institutions. We noticed in our mills at Connecticut and Massachusetts that a good many children of mothers who wanted to work in the mill were neglected during the day, because of the absence of the mothers, and that the more conscientious mothers would not leave their children, and those who perhaps were in better condition financially through other workers in the family, and could stay home with the children, still preferred to work if the children might be provided for.
>
> We therefore inagurated an experimental nursery in Danielson, Conn., which became immediately popular and received the quick

Crèches!

support of the clergy, and within a week it was necessary to make plans for its enlargement. We were shocked to find so many children suffering from malnutrition and general results of neglect or ignorance on the part of the parents. This is a bad thing for the community and a bad thing for the State. It breeds a race in the coming generation that will be defective physically and hence mentally. It makes backward school-children, and hence contributes to crime. There is nothing in my judgment in our whole housing campaign which has proved of more far-reaching importance than caring for the children, and surely the carrying out of it is its own reward, for the trained nurses and attendants, scientific cooking provided, and daily visits from the doctor have made happy children out of a lot of unhappy ones, and contented parents, who, it can be stated with assurance, would never be satisfied again to see their children less healthy and vigorous and contented than they are as a result of the administration of the nursery. Certainly the nursery has been a boon to all. It has won the hearts of the mothers and contributed to contentment, and been one of the factors in our turnover of labour, which, in so far as it is housed in our own modern housing, has been reduced from 400 per cent to actually less than 10 per cent

We have ample evidence that the experience of other manufacturers has been the same as ours, and I have talked with some of the largest concerns promoting home building for their employees and the story is everywhere the same.

The plans for the nursery at Danielson show a splendidly equipped institution with large playrooms, dining-rooms, cradle room, bath, pantry, dish-washing room, open terraces, cloak rooms and other utilities and amenities, and should captivate the imagination of all who believe in the possibility of better and more human relations between capital and labour.

It is noteworthy that the British Ministry of Health are advocating similar methods for the preservation of child life. In 1918, for the first time since efficient records have been compiled, the death rate exceeded the birth rate. The maximum for the birth rate was reached in the years 1871–1880, when it amounted to 35·4 per 1,000. From that time a steady decline in the figures became evident, and in 1918 they had fallen to 17.7 per 1,000. The British Municipal Journal draws the conclusion that health conditions must be improved if the race is to be preserved.—*Alfred Buckley*

THE HOUSING OF UNSKILLED WAGE EARNERS

In the face of all that has been done and all the money that has been spent on attempted solutions of the housing problem, the housing of the unskilled or low-paid wage earners cannot yet be considered as solved. Not only has it been found very difficult to provide houses at a low enough purchase price to meet the case of the poorest workman, but it has been found that a large proportion of workers are unable to take advantage of the current house-purchasing schemes because of lack of means to meet even a small percentage of the cost. The needs of such workers can only be met by the erection of houses at a price that would enable them to be rented at from $15 to $20 a month, inclusive.

The time seems to have arrived when the housing of families depending upon the returns from unskilled labour will have to be undertaken by Governments in the interests of national efficiency. It

does not seem any longer that " the incentive of gain " can be recognized as an efficient and satisfactory stimulus for the adequate housing of the low-paid wage earner.

Mrs. Edith Elmer Wood, in her volume entitled " The Housing of the Unskilled Wage Earner: America's Next Problem," just published by the Macmillan Company, declares that one of the incidental benefits from the war has been the removal of the whole question of the housing of the poor from the domain of speculative enterprise to that of social and communal responsibility. " Great Britain," she says, " has written on her statute books and established in her practice the doctrine of communal responsibility for the housing of the people. The war has quickened the public conscience in matters of social justice; it has taught us the need of conserving life and health and that, if we expect good men to keep on working under high pressure, they must have real homes to go back to when the day's work is done, not simply a roof and a bed. Under the strain of war the law of supply and demand, always painfully inadequate, broke down completely and almost overnight the great step was taken of establishing Government aid in housing, which would, under ordinary circumstances, have required years of patient education and work."

Mrs. Wood maintains that unskilled workers cannot be supplied with decent homes under existing economic conditions on a business basis and the work must be undertaken as the intricate problems of the war were undertaken, by the application of Government machinery and the science and skill of expert students of the problem. Only by such methods were the immense difficulties of war administration overcome.

Mrs. Wood gives an exhaustive history of the progressive housing legislation of New York and other cities and countries in the interests of better housing. She shows that the tendency of governments in democratic countries is to allow the maximum of freedom until such freedom becomes a danger to the state. It has been manifest for a long time that in practically all large cities, making the housing of the poor dependent upon the incentive of gain has produced results that have become distinctly dangerous.

When legislation begins to be applied to such questions as housing the first steps are usually restrictive. It is Mrs. Wood's purpose to show that restrictive legislation can never solve the problem of housing. It is not enough to say what must not be done. One of the most obvious results of restrictive legislation is to put a stop to much of the housing provision that was supplied under the laissez-faire principle.

In order to develop a constructive policy she argues that there are at least three positive methods that may be adopted by a state. The first is direct State or municipal housing; second, government loans to non-commercial housing companies, such as co-partnership building societies and, third, direct government loans to individual workingmen.

The principle of differential taxation by which working-class houses, up to a certain figure, would be exempt from municipal taxation, Mrs. Wood considers, is legislation of a negative rather than a positive type. She points out that, for any solution of the problem, restrictive *and* constructive legislation are necessary; the former for the prevention of bad housing and the latter for the actual building of satisfactory houses for the working class population.

"Mere increases of wages will not build houses, as Henry Ford has proved by his experience in Detroit. The landlord will merely raise rents to correspond".

On the other hand, constructive legislation in itself will not be sufficient. There must be minimum standards and town planning to

prevent the creation of new slums and for the gradual elimination of those that exist. There will always be a population willing to live in cellars or dark rooms, in filth and dilapidation to save a few dollars a month of rent so long as the community allows landlords to offer such places for living purposes. Mrs. Wood is convinced that housing and town planning should be bound as closely together as possible. She sees that attention should be directed, not only to the actual structure in which people live, but also to the surroundings of the house so that such questions as air space, gardens, grouping of buildings, height and density of buildings—factors that are vitally important in the problem of improved housing—should not be neglected.

"Every state", she says, "should have a restrictive housing law, a constructive housing law, and a town planning law. These might be three separate statutes or might be included as parts I, II, III of the same statute". Mrs. Wood is of opinion that the British method of direct construction through government machinery, together with the financing of public utility societies, is entirely wholesome. She thinks that the element of competition between municipal housing and non-commercial housing companies, who are likely to bring special enthusiasm and ability to their task and to take special pride in their work as social reformers, is likely to work in the direction of public welfare.

Mrs. Wood takes issue with the common objections to government and municipal housing. She states that, at a recent meeting of the United States National Housing Association, a delegate declared that he did not believe the time would come when American tax bearers would be willing to build houses for able-bodied work-people to live in and that the statement was received with considerable applause.

Respecting the attitude of this delegate, Mrs. Wood says:—

"Now the whole appeal of this statement lies, of course, in the unexpressed implication that the taxpayers would be out of pocket by such a transaction and that they would be unwilling to add to their burden of taxation in order to provide houses for able-bodied working people.

"The present writer is of the opinion that a very good argument could be made in favour of the taxpayers adding to their burdens for such a purpose. She believes that if there were no other way of securing a wholesome home for every family, the taxpayers *ought* to assume such a burden, and that, if they were really unable to carry both, housing should take precedence of schools. Health and morals are needs more primary and elemental than education.

"As a matter of fact, however, there is no such need, and consequently no excuse for any such policy in the United States. We are advocating the use of the community's credit, not of its funds. We are aiming to give a service *at cost*, not below cost. A properly conducted constructive housing scheme is exactly self-supporting. There is neither profit nor loss of a financial sort to the community, though there is very great profit in the form of better health and better citizenship.

"The worker is to have his house at cost, *whatever that may be*, not at a given price, no matter whether or not there is a deficit. Every effort should be made to keep down expenses so as to offer a house of approved standard at a predetermined rent. But where a small deficit creeps in, in spite of calculation, the rent should be raised to meet it.

"As with municipal building, so with government loans. Commercial profit in money lending is to be eliminated. The community uses its credit to obtain cheap and plentiful money and gives the borrower the benefit of the cheapness and of the plentifulness. It is he, however, and not the community, who pays the interest and repays the principal. This fact has to be emphasized, for the mention of a bond

issue arouses in the taxpayer's mind the idea of a big bill, as for parks, bridges, or public buildings, which he or his successors will have to pay. If the bond issue is for the purpose of housing loans, the borrower pays the interest, plus a contribution to the sinking fund, plus whatever is necessary to pay the overhead charges of the bond issue, and the taxpayers pay nothing." Mrs. Wood's book is worthy of study by all students of the difficult but increasingly important problem of housing. —*Alfred Buckley*

ADAPTATION OF WOODEN HOUSES TO BRITISH CONDITIONS

Wooden houses, common enough in Canada, are a novelty in Great Britain, but the present severe shortage of houses in the Old Country, has led Englishmen to experiment with New World methods of construction. After much controversy there seems to be a real probability that the advantages of the wooden houses are likely to be appreciated in Britain. In view of the fact that, after a full year of preparation for the extensive building programme undertaken by the Ministry of Health, very few houses have been erected, it is being realized that the question of ultimate durability is not the only one for consideration. The time has come, therefore, when the question of speed in building is being recognized as equal in importance to that of durability, considering the urgent need for housing in the Old Country.

Sir Charles T. Ruthen, F.R.I.B.A., has experimented in the building of wooden houses at Newton, near Swansea, and has set forth the results in an article in *The Surveyor* for October 24th, 1919. He was convinced by study of American and Canadian house building that the wooden house was practicable for British use; that its durability was sufficient for ordinary purposes, and that it could be erected more cheaply and much more quickly than the ordinary brick house with which the British people are familiar.

He points out the fact that 75 per cent of the private houses in America are built of wood, and that thousands of the very fine houses constructed there have lasted satisfactorily for a period equal to the life of the majority of the brick and stone houses in England. He therefore designed and built three types of houses, finishing them with cement plaster, and the result has given entire satisfaction.

The foundations are of brick and a bitumen, damp-proof course is laid upon this foundation. The entire site has been covered in each case with a layer of cement concrete. The wooden framework of the house is then erected in much the same way as in Canada. So far there is nothing original, but the second process involves the application of a bishopric stucco board consisting of three distinct materials. The first is a fibrous board; the second a thick layer of asphalt-mastic, and on this is placed cement plaster for the external finish. The final appearance is much like that of a brick house with cement stucco. The cement plaster must be of good quality, applied in two distinct coats: the first fills in between dove-tailed laths and forms a skin over the laths, and the second is of similar rich mixture and is finished in ordinary stucco manner. The total thickness of the cement plaster upon the first of the laths is about one-half inch.

The intention has been to show that artistic, strong, lasting, weatherproof houses can be erected in a few weeks and that, after completion, they can be tenanted immediately. The houses in question

were built in 30 days. The cost was $625 less than would have been required to build a brick house. It is also claimed that the area to be covered is smaller, the foundations less costly, and the roof timbers and slating less in quantity.

"In conclusion," says Sir Charles, "I may state definitely that, in the present national emergency, I place speed in erection first of all, and incidentally, speed with which houses are tenantable after completion. I place, next in order of importance, weather-proof qualities and stability of structure; all other essentials follow in order of importance. I feel confident that the life of structures properly erected, similar to the specimen houses at Newton, will be quite as long as most of our pre-war houses, and there is no doubt that the cost of erection is less."—*Alfred Buckley*

CONCRETE BLOCKS IN HOUSE CONSTRUCTION

One of the most interesting features of the Glasgow Housing Exhibition is the concrete outfit which was responsible for the building of the "Mystery Port" during the war.

There are in actual operation several machines used in the construction of concrete houses. The machine makes sufficient blocks and slabs in 3½ days for a two-storey cottage covering an area of 400 square feet. There are other machines for various features of the work, such as a pressure machine specially designed for light labour and small housing schemes, a chain spade concrete mixer with 2½ h.p. paraffin engine, a stone breaker, which crushes the hardest rock down almost to graded sand, and a roofing tile machine ensuring tight, waterproof roofs.

The Scottish Local Government Board, in its official report published in July, 1918, states that the following methods of construction have been adopted for the outer walls:

(1) 11-in. cavity walls formed of two 4½-in. brick with a 2-in. cavity, the walls being bound together with galvanized iron ties.

(2) 9-in. cavity walls formed of two 3-in. concrete slabs built similarly to (1).

(3) 4½-in. brick walls with 9-in. brick piers at intervals.

(4) 2½ in. concrete slabs with 9-in. concrete piers at intervals.

The last two modes of construction have been adopted only in single-storey types of houses.

Regarding this special type of house construction, as demonstrated at the exhibition, it is claimed it is absolutely bone dry, the cavity wall, like a thermos flask, retaining the interior heat and excluding that from outside, with the result that a house so built will not only be healthier and more permanent than that erected with any other material, but cool in summer and warm in winter.

HEALTH WORK IN WAR AND PEACE

A wise physican, skilled our wounds to heal,
Is more than armies to the public weal.—*Pope.*

The world has never so thoroughly realized the truth of these words as during the recent war. Prominent national leaders frankly admit that medicine, as practiced in camp and hospital, on sea and land, in workshop and factory, has been an important factor in maintaining our national efficiency during the war. Not only has illness been prevented, but the fit have been maintained so and thousands have either been made fit or have been allotted work for which their strength was adequate, even though not of the highest order.

It has been acknowledged that the success of the armies of the Entente was as much due to the high standard of their physical condition as to their valour and courage; indeed, their power of endurance had a most important bearing on the latter. Medicine now has, therefore, a great opportunity to be heard and to take its place in shaping the national life of our people.

It must, however, be remembered that the favourable conditions under which physicians carried on their work during the stress of war no longer exist. The medical man will not be able to work with a disciplined force. Hence, it may be that a long process of education must be begun to educate the public to the necessity of measures which, in dealing with the army, could be put into effect by a simple military order.

It may be suggested that Government itself will, through the new Department of Health, either initiate legislation or carry on a vigorous campaign of education, but, as democratic governments cannot legislate in advance of public opinion, the educational campaign must come first.

During the war there were four chief divisions of medical service, viz, medicine, surgery, sanitation, and medical laboratories. These were subdivided into special sections, each assigned its own particular duties, but all branches working together as a unit. The service also included specialists and consultants, and with this organization it was possible to accomplish results which stand forth as benefits for all time.

What medical men can do when organized in a businesslike way has been demonstrated. It is a great problem for medical men themselves to solve as to how far similar administrative and co-operative methods can be adapted to the people's wants in civilian life.

What then is to be the position of the profession in relation to the public? Some advocate a public medical service; others, an extension of hospitals and dispensaries with a state insurance to persons of limited income, such as prevails in Great Britain; others, again, would accept philanthropy from rich men and corporations, though it is to be feared that the self-respect, both of the medical men and of the public would suffer in consequence.

In the early days of health work in this Dominion, it was considered by our legislators that all the work which should be done under our provincial health Acts might properly be administered by local boards of health, but experience demonstrates that the operations of these boards have not been a success, except in a comparatively few instances. The scheme was copied from Great Britain, but even there it has not always been successful. Voluntary effort has endeavoured to supply the shortcomings of this system and, as a result, we find many voluntary organizations carrying on work which should more properly be controlled and directed by the local health authorities. For instance, there are societies for tuberculosis work, for babies, for maternal welfare, for milk stations, for district nurses, etc. The reason is simply that the local boards of health have not been provided with sufficient funds to carry on these various lines of work. There is, therefore, a very real opportunity for a central, national authority to assist and co-ordinate these various activities.

Medical research work, again, is a most important question, for the progress of modern medicine is intimately dependent on experimental laboratory work, which must be carried on in closest association with clinical medicine and surgery. Scientific investigation should not be left to the medical departments of our universities and to general and special hospitals without any co-ordination by a central department of government.

There is also wide scope for the publication of literature on hygiene suitable for popular reading. In this respect we can profitably follow

the example of the United States Public Health Service, which issues most valuable literature, of interest both to the medical profession and to the public.

There is one other problem, which appears difficult of solution, namely, to devise some workable scheme whereby the nation can, from time to time, ascertain the true facts as to our physical efficiency.

The medical examination of conscripts revealed to the country the number of men of A-1 standard and those who were of a lower category. Of 361,605 men examined from September 22, 1917, to November 16, 1918, only 180,366, or less than 50 per cent, were of category "A." Had the war not intervened, we might have continued preaching for years as to the degeneracy of the race, and have been scoffed at as many have been in the past. What is needed now is a system of examination which will show accurately the true physical condition of the whole people. The figures in respect to medical examination under the Military Service Act are what are required in peace time. A "health census" should be taken from time to time, because, without the facts, we can never feel sure of the progress we are making in improving the physical standard of our people. It is to be hoped that a future report will be of a more encouraging nature.

Our industrial efficiency depends very largely on the physique of the worker, and hence the work of the public health authorities is of the highest importance in assisting us to maintain our place, not only in the bitter struggle of war, but in the less strenuous rivalry of peace. —*Chas. A. Hodgetts.*

THE PHYSIOLOGY OF THE INDUSTRIAL WORKER

The extraordinary call upon human energy in every field of industry during the period of the war has directed great attention to the physiological aspects of the human factor. Largely as a result of the urgency of the situation, great but somewhat spasmodic efforts were made along the lines of, so-called Social Welfare work, but all of these efforts have been of a tentative nature and, though they have served the purpose in the great emergency, it must not be concluded that any or all of them can be generally adopted in the work of reconstruction. There are certain physiological facts which must be studied and worked out before we can apply scientific methods to the solution of these human problems and, as economy is as important as efficiency, we would advise caution in the adoption of any general scheme of welfare work. Each separate industry must be scientifically studied as to its particular effects on the workers and the remedy must be applied as science directs.

Then, too, we must not forget or overlook the fact that, altogether apart from the industrial work itself and the labour involved, there are important factors which make for efficiency as well as impair the vitality of the worker. These relate to the home and all that goes with the worker's life outside the hours of labour. It is not alone the time spent in the factory which make or mar efficiency; the remaining fifteen or sixteen hours play a most important part, and the best of conditions in the factory or warehouse may be completely neutralised by the evils of our modern home life.

There are, therefore, two problems to be studied when discussing industrial physiology. We cannot separate them and, if capital has its responsibilities during the hours of employment, the labourer has his or her responsibilities during the remainder of each twenty-four hours. We cannot hope to arrive at the maximum of human efficiency if we do

not work out the problems from the basis of both industrial and social physiology. The two must be worked out simultaneously by both observation and experiment.

Industrial physiology has two objects: (*a*) the scientific one of learning how the industrial worker actually performs his work and what the conditions are under which he can work most efficiently and produce the largest output, at the same time maintaining his bodily health and keeping himself in the best working condition; (*b*) the practical one of establishing in each factory the conditions which conduce both to the maximum in output and the maintenance of the maximum power or efficiency of the employee.

Some of the subjects under investigation are the following:

(*a*) Certain physiological and psychological tests with workers;

(*b*) The output of successive hours of the working day in different types of operations has been measured, and the daily curves plotted;

(*c*) Physiological analyses of certain operations have been made by means of the cinematograph and other methods;

(*d*) The self-limitation on the part of workers has been studied, as well as others bearing on efficiency.

The following are some of the results obtained:

(*a*) It appears practicable to employ certain tests in selecting workers and assigning them their work;

(*b*) The output curves show a reduced efficiency as the day proceeds, indicating a growing fatigue;

(*c*) The duration of work which conduces to highest efficiency varies with the character of the work itself;

(*d*) The introduction of resting periods in the working spell is accompanied by a total increase in the day's production;

(*e*) A hot day tends to impair strength and reduce output;

(*f*) Night work, in general, is less efficient than day work, its total output is less;

(*g*) Alteration of periods of night with day work is more profitable that continuous night work;

(*h*) Accidents to workers are a source of marked inefficiency. They are caused by fatigue, inexperience, speed of working, insufficient light and high temperature. Many industrial accidents are preventable and adequate provision of first aid measures diminish the seriousness of accidents.

(*i*) A high labour turnover is incompatible with the highest degree of efficiency. It is expensive, as it imposes on the employer the necessity of training new workers; it is also a serious factor in the causation of accidents.

In regard to women, it is found that they are capable of performing a much greater variety of industrial operations than has heretofore been recognized. Statistics show, however, that they are absent from their work more frequently than men. They should not be employed in night work.

As comparing the two sexes, the problem is not so much that of their efficiency, but rather what types of work each sex is best fitted for.

The foregoing is but a brief review of the subject, and the work done has only been touched upon, but sufficient has been said to show that, so far as industrial physiology is concerned—as apart from that of social physiology—there is a field for work being carried on in Canada which cannot fail to be of lasting benefit alike to employer and employee and all of which will make for our national efficiency.

In Great Britain, the work begun during the war by the Health of Munition Workers Committee is being continued by the Industrial

Fatigue Research Board. Its functions are to consider and investigate the relations of the hours of labour and other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and to the preservation of health among the workers.

In the United States, the Public Health Service, in co-operation with other national committees, has been conducting investigations on different topics of industrial physiology and its report will soon be made public.

The Federal Department of Health of Canada may take up this important and intricate question and not only pursue investigation and enquiry on the lines of industrial physiology, but consider the still more serious problems of social physiology which may be found to have a more important bearing on industrial efficiency or inefficiency than those revealed by a study only of industrial physiology, which, in our opinion, is the one of lesser importance; but it will be of no benefit to remedy the one at the expense of the employer without eradicating or minimizing the evils that surround the employee during the fifteen or sixteen hours he is not employed in the factory. The tenement, with its accompanying social evils, will be found to be a more important factor to wrestle with in making for national efficiency than many of the conditions revealed by a study of industrial physiology alone.

IMPROVED PATENT MEDICINE LAW

Most important and somewhat drastic changes have been made by the Parliament of Canada in respect to proprietary and patent medicines, all of which, if properly enforced, will prove of great public benefit. It will be illegal hereafter either to manufacture, import, or offer for sale proprietary or patent medicines containing opium or its derivatives for internal use.

Patent medicines bulked with soothing syrups are covered by the inhibition that no patent medicine intended for infants under one year of age shall contain any derivative of coal-tar, which, in the opinion of the Advisory or Patent Medicine Board, is dangerous to children of that age.

No proprietary or patent medicine coming under one or other of the following groups shall be either manufactured, imported, exposed or offered for sale or sold in the Dominion:

(*a*) If it contains cocaine or any of its salts or preparations;

(*b*) If it contains alcohol in excess of the amount required for solvent or preservative;

(*c*) If it contains alcohol insufficiently medicated, to be used as a beverage;

(*d*) If it contains any drug included in the schedule and the name thereof is not that commonly employed;

(*e*) If any false, misleading, or exaggerated claims are made on the wrapper, label or advertisement of the article;

(*f*) If the article be represented as a cure for any disease;

(*g*) If it contain any drug included in the schedule, the name of which and the amount per dose of which are not conspicuously printed on an inseparable part of the label and wrapper of the bottle, box, or other container, or if the quantity of such drug exceeds the amount permitted by the Advisory Board.

THE CHILD IN INDUSTRY

To use the words of Ruskin, "To become a man too soon is to become a small man". The forcing of maturity at an early age upon either a boy or a girl not only results in a small man or woman physically, but it also results in smallness of intellect and narrowness of vision, as well as incapacity for the appreciations of obligations and the assumption of responsibility.....Such unfitness is not only serious from the point of view of defence, because of the large number of men of military age that are incapable of bearing arms when it becomes necessary to call on them to do so, but the lack of health and strength is a serious handicap to the industries of a country where such conditions exist. The principal factor in industrial production, in fact in production of any character, is the physical and mental alertness and energy of the people. Any cause, therefore, which decreases the physical and mental power decreases the most important resource of a country.

Another important effect of weakening a nation physically is the certain inefficiency of the coming generation.....Keeping children out of factories, shops and mines until they are fourteen or sixteen years of age undoubtedly has a favourable effect on their bodies, but to allow them to roam without continued mental direction and improvement is to encourage a crop of social weeds which may be the more serious because it is stronger. Physically defective people are a liability .....which could only be properly eliminated by suitable provision for and methods of educating the boys and girls.

Another feature of the abolishment of child labour and the substitution of compulsory education for strenuous hours of employment in early years is that the resulting increase in trained intelligence will make possible a much better relationship between the employer and his workmen. There will be a better chance of the workman understanding and appreciating the problems of management, sufficiently to fit him for participation in the internal affairs of the concern which affect him. He is entitled to this participation and will develop a deeper appreciation of the responsibilities which each person should have for the welfare of the whole community.—*Pulp and Paper Magazine.*

HINTS REGARDING CARE OF THE EYES

1. The continued use of the eyes at close work is harmful, even if the eyesight is perfect. Rest the eyes every few minutes when studying or writing by looking up from the book or paper; if they still feel tired, do something else for a while.

2. To read or study when tired is to overstrain the eye. Therefore, avoid night study as far as possible.

3. When using artificial light, do not let the light shine directly into the eyes. The light should come from behind you and from the left side. On no account let the artificial light come from in front.

4. When the child experiences difficulty in seeing the blackboard from the back part of the room, or suffers from headache in school, or shows evidences of eye strain, his eyes should be examined to ascertain the cause, and it should be corrected by glasses prescribed by a competent specialist.

5. When glasses have been thus prescribed, they must be worn constantly. If needed in school, they are necessary all the time.

6. Keep the glasses clean.

7. The adjustment of the frame is of as much importance as the correctness of the lenses. The child should look through the optical centre of each lens. As frames get bent and children grow, this adjustment should be made at frequent intervals.

8. Glasses ordered for astigmatism or any severe refractive error require most accurate adjustment and should be mounted in spectacle frames.

9. Eyes should be re-examined for glasses each year of school life, because eyes often change in refraction, as children grow older, and lenses suitable at one age are unsuitable at a later period.

10. The immature eyes of childhood are very susceptible to having their defective sight made worse by using glasses not suited to their special defect. They require constant and careful supervision.

As children obtain their knowledge both in and out of school chiefly through their eyes, it is essential that parents should exericse an intelligent and careful supervision. They should remember that it is better for the child to lose his chance of high marks in school than to have weak eyes for the remainder of his life.

A child's eyes are priceless. The slow progress in school of many a boy or girl is due to poor eyesight, which might easily, in most cases, be remedied by the use of proper glasses.

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WAR-SAVINGS STAMPS